BORN SEMICONDUCTOR

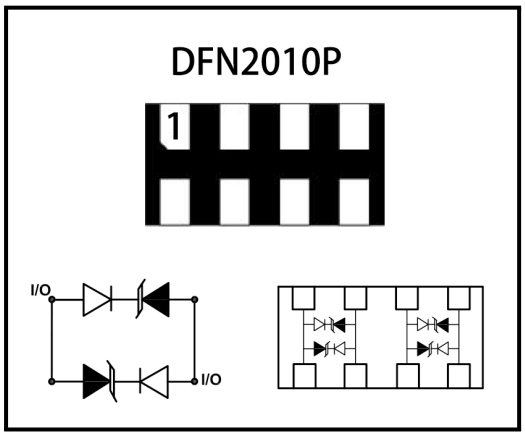
BDFN8C2R52L

ESD Protection Diode Array

Features

- 160Watts peak pulse power (tp = 8/20μs)
- Solid-state silicon-avalanche technology
- Low clamping Voltage
- Low leakage current
- Protection one data/power line
- IEC 61000-4-2 ±30kV contact ; ±30kV air
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 10A (8/20μs)

Package



Applications

- 10/100/1000 Ethernet
- Integrated magnetics/RJ-45 connectors
- LAN/WAN Equipment
- Security Cameras
- Industrial Controls
- Peripherals
- Notebooks & Desktop Computers

Mechanical Data

- DFN2010P8 package
- Molding compound flammability rating: UL 94V-0
- Packaging: Tape and Reel
- RoHS/WEEE Compliant

Marking



Ordering information

Order code	Package	Base qty	Delivery mode
BDFN8C2R52L	DFN2010P8	3k	Tape and reel

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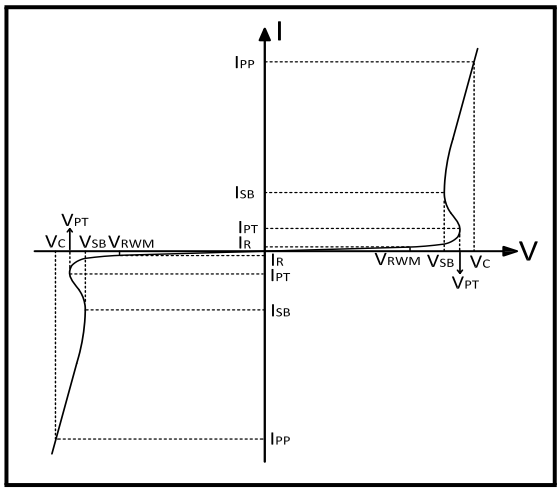
Revision: 2022-Jan-1-A

BDFN8C2R52L

ESD Protection Diode Array

Electrical Parameters (T_A = 25°C unless otherwise noted)

Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Peak Reverse Working Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current



Note:8/20us pulse Waveform.

Absolute Maximum Rating

Rating	Symber	Value	Units
Peak Pulse Power (tp =8/20μs)	P_{PP}	160	Watts
Peak Pulse Current (tp =8/20μs)	I_{PP}	10	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	30 30	KV
Lead Soldering Temperature	T_L	260(10seconds)	°C
Junction Temperature	T_J	-55 to + 150	°C
Storage Temperature	T_{stg}	-55 to + 150	°C

Electrical Characteristics

Parameter	Symber	Conditions	Min	Typical	Max	Units
Reverse Stand-Off Voltage	V_{RWM}	–	–	–	2.5	V
Reverse Breakdown Voltage	V_{BR}	I_T=1mA	3.5	4.5	6.5	V
Reverse Leakage Current	I_R	V_{RWM}=2.5V,T=25°C	–	0.05	0.5	uA
Clamping Voltage	V_C	I_{PP}=10A, tp =8/20us	–	14	16	V
Junction Capacitance	C_j	V_R=0V,f=1MHZ,I/O to I/O	–	1.2	1.4	pF

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ESD Protection Diode Array

Typical Characteristics

Figure 1: Peak Pulse Power vs. Pulse Time

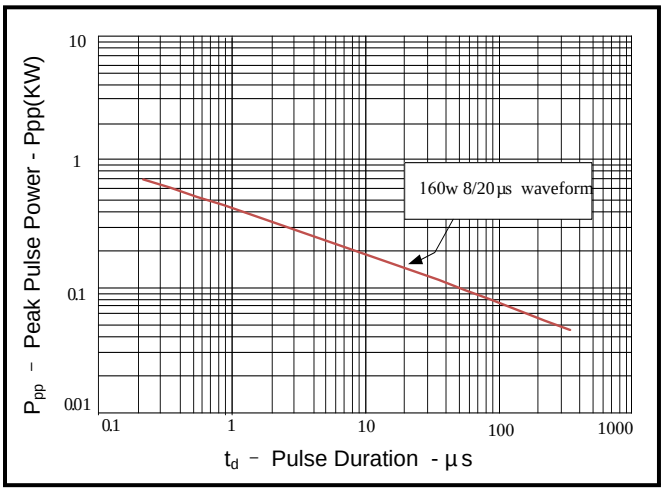


Figure 2: Power Derating Curve

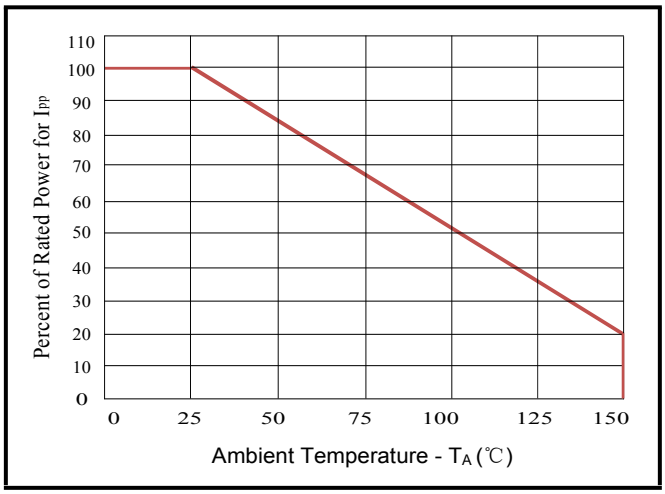


Figure 3: Pulse Waveform

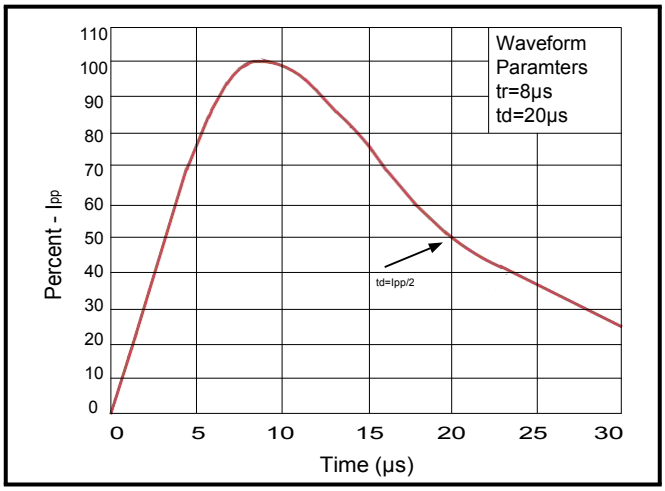
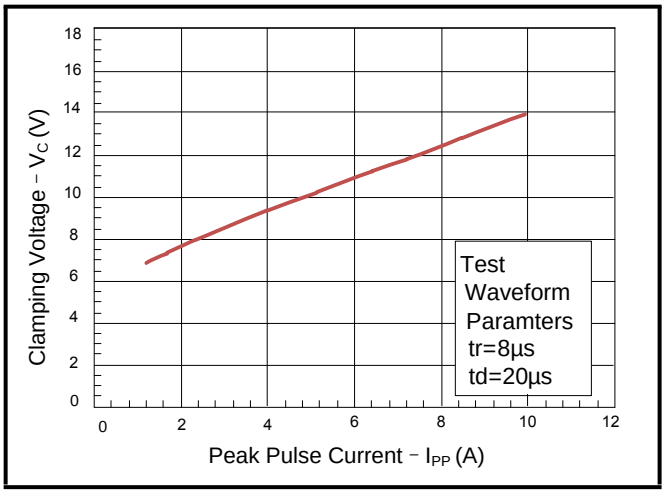


Figure 4: Clamping Voltage vs. I_{PP}



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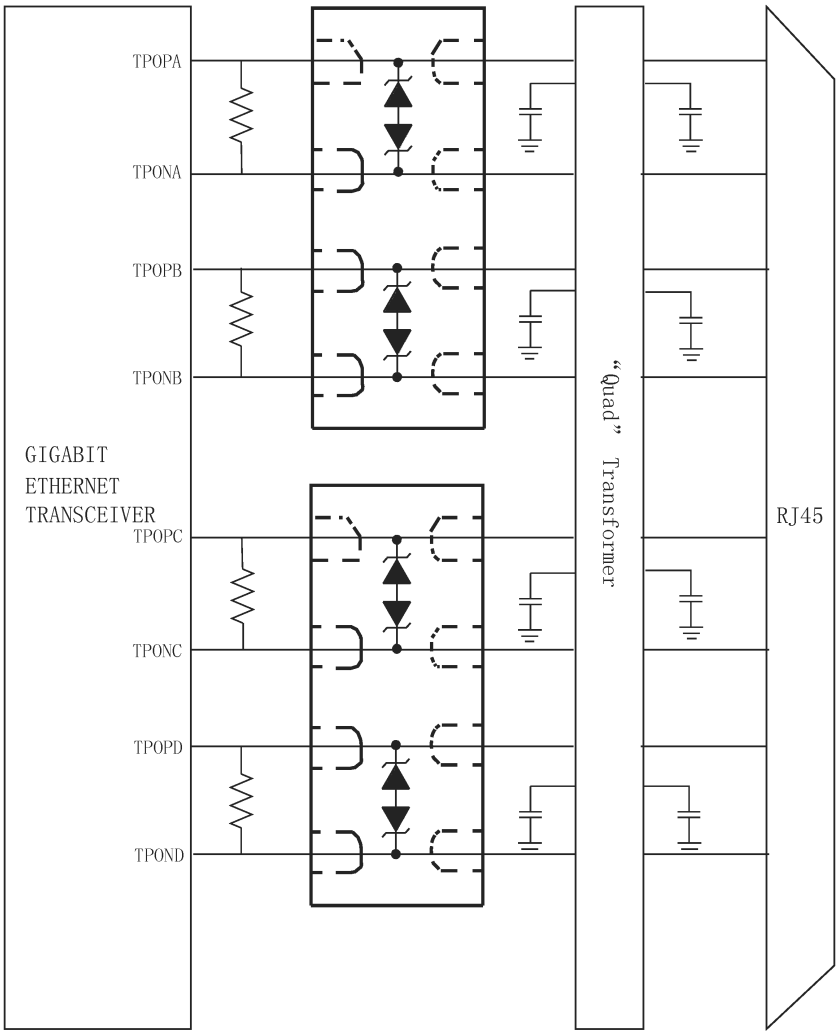
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BDFN8C2R52L

ESD Protection Diode Array

Application Information

Electronic equipment is susceptible to damage caused by a variety of sources, including Electrostatic Discharge (ESD), Electrical Fast Transients (EFT) and Lightning strikes. The BDFN8C2R52L was designed to protect the sensitive equipment from damage which may be induced by such transient events. This product can be configured in a connection to meet the requirement of differential line pairs as follows:



Schematic Diagram for Gigabit Ethernet ESD/Surge Protection

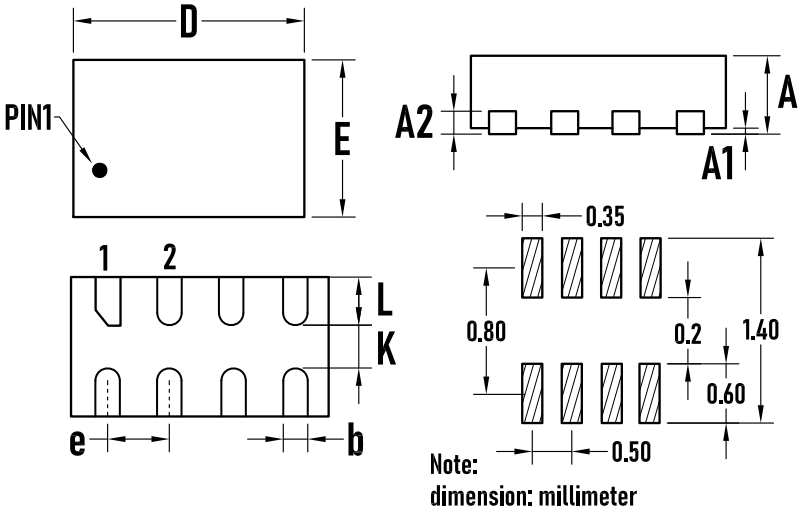
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BDFN8C2R52L

ESD Protection Diode Array

Outline Drawing – DFN2010P



SYMBOL	MILLIMETER		INCHES	
	MIN.	MAX.	MIN.	MAX.
A	0.45	0.55	0.018	0.022
A1	0.00	0.046	0.000	0.002
A2	0.110REF		0.005REF	
b	0.200	0.300	0.008	0.012
D	1.90	2.10	0.074	0.083
E	0.90	1.10	0.035	0.043
e	0.50TYP		0.020TYP	
L	0.274	0.426	0.011	0.017
K	0.20MIN		0.008MIN	

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